

ASSIGNMENT 8

Textbook Assignment: "Graders and Scrapers" and "Dozers and Rollers," pages 10-19 through 11-29.

Learning Objective: (continued)
Recognize the principles and components of scrapers.

- 8-1. Which of the following scraper components forms the rear wall of the bowl?
1. The stinger
 2. The apron
 3. The ejector
 4. The paddle wheel
- 8-2. Which of the following are the basic control levers on a scraper?
1. The bowl
 2. The apron control
 3. The ejector
 4. All of the above

Learning Objective: Recognize the principles of scraper operations.

- 8-3. When you are operating a scraper, what component must be properly engaged to obtain maximum engine power output?
1. Transmission gear ratio
 2. Differential lock
 3. Bogie drive shift lever
 4. Transfer case sprag unit
- 8-4. Improper down shifting overspeeds the transmission and engine usually resulting in premature wear.
1. True
 2. False

- 8-5. Downhill scraper speed should NOT exceed what maximum speed in miles per hour (mph) more than attained on level ground in the transmission ratio engaged?

1. 20
2. 15
3. 10
4. 05

- 8-6. A scraper work cycle has a total of how many phases of operation?

1. One
2. Two
3. Three
4. Four

- 8-7. To allow material to enter the bowl when loading a scraper, you should ensure the apron is opened by what number of inches above the cutting edge?

1. Between 1 to 3
2. Between 4 to 8
3. Between 9 to 12
4. Between 13 to 15

- 8-8. What term is used to describe a scraper bowl load that is filled to capacity?

1. Struck load
2. Full load
3. Heaped load
4. Top load

- 8-9. When a push cat is waiting for a scraper, it should be positioned at what degree angle off the lane to be cut?

1. 90°
2. 75°
3. 45°
4. 15°

8-10. A push cat operator must ensure that the reinforced section of the dozer blade is centered on what component of the scraper?

1. Gooseneck
2. Push block
3. Spill guard
4. Bowl stiffener

8-11. When traveling over a slippery haul road, you should carry the scraper bowl in what manner?

1. As high as possible
2. As low as possible
3. About halfway between the highest and lowest position
4. At the height the material is to be discharged

8-12. After the apron opening has been adjusted and the dirt flowing through the opening lessens, the operator should engage which of the following levers to finish unloading the scraper bowl?

1. Bowl
2. Apron
3. Ejector
4. Power takeoff

8-13. What term is used to describe the technique of obtaining a heap scraper load of sand?

1. Back-track loading
2. Shuttle loading
3. Optimum loading
4. Pump loading

8-14. At the start of a pump loading operations, an operator should adjust the opening of the apron to how many feet?

1. 1
2. 2
3. 3
4. 4

8-15. Oversize objects, such as large rocks, can cause damage to a scraper by denting, bending, or straining parts.

1. True
2. False

Learning Objective: Recognize the principles of scraper production techniques.

8-16. Which of the following types of loading techniques uses the force of gravity on the scraper to get larger loads in less time?

1. High-speed
2. Downhill
3. Shuttle
4. Straddle

8-17. When you are straddle loading, the island left between the first and second scraper cut should be what width, in feet?

1. 4 to 5
2. 10 to 12
3. 15 to 20
4. 25 to 30

8-18. Which of the following types of loading is used for shortcuts when it is possible to load in both directions?

1. Downhill
2. Straddle
3. Back track
4. Shuttle

8-19. During optimum loading operations, push-loaded scrapers should be loaded within 1 minute and within a maximum distance of how many feet?

1. 25
2. 50
3. 75
4. 100

- 8-20. Which of the following operations is NOT part of a scraper cycle time?
1. Loading
 2. Hauling
 3. Refueling
 4. Unloading
- 8-21. Scrapers on the haul road should only travel in the highest gear that is safe for the road.
1. True
 2. False
- 8-22. Which of the following actions should an operator perform if a scraper begins to fall off a fill?
1. Steer downhill
 2. Drop the bowl
 3. Rapidly accelerate
 4. All of the above
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- Learning Objective: Recognize the principles and components of dozers, tracks, and track frame.
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- 8-23. Dozers are usually rated by size and what other item?
1. Engine size
 2. Power
 3. Track length
 4. Blade width
- 8-24. Dozer drawbar pull is greatest in the highest transmission gear range.
1. True
 2. False
- 8-25. What is the varying ground bearing pressure range for track equipment?
1. 1 to 4 psi
 2. 6 to 9 psi
 3. 10 to 15 psi
 4. 18 to 20 psi

- 8-26. What action should an operator perform when operating a dozer in water deep enough to reach the radiator?
1. Tape off the air cleaner
 2. Tape off the exhaust stack
 3. Disconnect the fan belt
 4. Disconnect the batteries
- 8-27. What component of the dozer contacts the track pin bushings and propels the dozer along the track assembly?
1. Drive sprocket teeth
 2. Front idler
 3. Carrier rollers
 4. Track rollers
- 8-28. What components, as they wear, will cause the track assembly to lengthen?
1. Grouser shoes and pins
 2. Sprocket teeth and bushings
 3. Pins and bushings
 4. Recoil spring and front idler
- 8-29. What term is used to describe the most common dozer track shoe?
1. Grouser
 2. Cleat
 3. Spikes
 4. Pads
- 8-30. What component keeps the track chain in alignment between the drive sprocket and the front idler?
1. Track rollers
 2. Lift sheaves
 3. Support bearings
 4. Carrier rollers
- 8-31. What component serves as a guiding support for the track chain?
1. Recoil spring
 2. Front idler
 3. Pitch arm
 4. Trunnion roller

8-32. The track adjuster fitting should be lubricated every time daily operator's maintenance is performed.

1. True
2. False

Learning Objective: Recognize the components and principles of dozer attachments.

8-33. Which of the following attachments are dozer attachments?

1. Blade
2. Ripper
3. Winch
4. All of the above

8-34. Which of the following personnel are responsible for checking the dozer cutting edges for wear?

1. The operations officer
2. The dispatcher
3. The operator
4. The field crew mechanic

8-35. Most push arms are attached to what location on a blade?

1. The top of the blade
2. The center of the blade
3. The front of the blade
4. The bottom of the blade

8-36. A forward blade pitch adjustment is for dozing what type of material?

1. Hard
2. Sandy
3. Salty
4. Loose

8-37. An angle blade can be angled to what amount of degrees to either side?

1. 10°
2. 15°
3. 20°
4. 25°

8-38. Which of the following types of blades drift large volume loads efficiently over long distances?

1. Angle
2. "U"
3. Straight
4. Push

8-39. Which of the following dozer attachments is used to break up compacted materials, to uproot boulders and stumps, and to rip up concrete slabs?

1. Jackhammer
2. Boulder buster
3. Ripper
4. Blade

8-40. The winch line pull is what percentage, if any, greater than a straight dozer pull?

1. 10% to 20%
2. 30% to 40%
3. 50% to 100%
4. None

8-41. When rewinding the wire rope back onto the winch drum, the rigger's hands should stay clear of the winch drum by at least how many feet?

1. 3
2. 6
3. 9
4. 12

Learning Objective: Recognize the principles of dozer operating techniques.

8-42. Crossing ditches, ridges, rocks, or logs at an angle with a dozer produces which of the following results?

1. Slows the fall
2. Lessens the danger of upsetting the dozer
3. Reduces the jolt of the fall
4. All of the above

- 8-43. What term is used to describe the operation of removing brush, trees, and rubbish from a designated area?
1. Bulldozing
 2. Stumping
 3. Clearing
 4. Ditching
- 8-44. What size diameter tree is considered a large tree?
1. 4 inches
 2. 6 inches
 3. 8 inches
 4. 10 inches
- 8-45. Making contact or releasing pressure on a tree with a dozer should be performed quickly and smoothly to avoid any shock to the tree.
1. True
 2. False
- 8-46. Punctured radiators, broken hydraulic lines, and damaged exhaust stacks are common types of equipment damage that occurs when clearing brush and trees?
1. True
 2. False
- 8-47. What is the most effective piece of equipment for removing rocks and boulders?
1. A dozer with a tilted blade
 2. A rock drill
 3. A forklift
 4. A jackhammer
- 8-48. What action should an operator perform to increase the digging action of a straight-blade dozer working in hard ground?
1. Tilt the top of the blade rearward
 2. Tilt the top of the blade forward
 3. Angle the blade to the left
 4. Angle the blade to the right
- 8-49. What is the maximum working distance for a medium-size dozer?
1. 100 feet
 2. 200 feet
 3. 300 feet
 4. 400 feet
- 8-50. Side-by-side dozing is impractical for hauls of less than what distance?
1. 50 feet
 2. 40 feet
 3. 30 feet
 4. 20 feet
- 8-51. Slot dozing can increase production up to what percentage?
1. 50%
 2. 40%
 3. 30%
 4. 20%
- 8-52. What term is used to describe the process of replacing excavated earth?
1. Spreading
 2. Finishing
 3. Backfilling
 4. Ditching
- 8-53. A sidehill excavation can be started more easily if what type of cut is made first?
1. Ditch
 2. Bench
 3. Slope
 4. Slot
- 8-54. What position should the dozer blade be in when backing away from the edge of soft fills?
1. As high as possible
 2. As low as possible
 3. In the float position
 4. Angled

8-55. A blade on a straight-blade dozer must have what type of accessory before it can be used as a push dozer?

1. A cutting edge
2. A hard facing
3. A reinforced block
4. A rubber bumper

8-56. An operator of a dozer should always wear a seat belt when dozing.

1. True
2. False

Learning Objective: Recognize the principles and components of rollers.

8-57. What term is used to describe the process of compressing loose soil into a solid mass?

1. Crushing
2. Compaction
3. Pulverizing
4. Condensing

8-58. In roller operations, what does the acronym vpm mean?

1. Vibration per mile
2. Vibration pounding minutes
3. Vibrations per minute
4. Vibrations pulsate moment

8-59. Vibratory rollers achieve compaction through which of the following factors?

1. Weight
2. Impact forces
3. Vibration response
4. All of the above

8-60. The impact forces placed on the soil during compaction are generated by what action of the roller?

1. The weight of the roller
2. The vibration of the drum
3. The kneading effort of the tires
4. The speed of the roller

8-61. A sheepsfoot drum is used for compacting heavy lifts of what thickness range?

1. 3 to 4 inches
2. 6 to 12 inches
3. 12 to 24 inches
4. 24 to 36 inches

8-62. A smooth drum roller is capable of compacting lifts of what thickness range?

1. 4 to 8 inches
2. 8 to 16 inches
3. 16 to 32 inches
4. 32 to 64 inches

8-63. What type of compaction effort is generated by a pneumatic-tired roller?

1. Vibration
2. Pounding
3. Kneading effect
4. Shaking

8-64. The air pressure in the tires of a pneumatic-tired roller should be set at what psi to compact a granular subbase?

1. 40 psi
2. 60 psi
3. 80 psi
4. 100 psi

8-65. What type of roller may fail to compact areas narrower than the roll and does NOT compact deeply in proportion to the roller weight?

1. Sheepsfoot
2. Steel wheel
3. Pneumatic tired
4. Smooth drum

Learning Objective: Recognize the principles of rolling techniques and bituminous rolling.

- 8-66. When you are performing rolling operations, the roller should travel at what speed range?
1. 1 1/2 to 3 mph
 2. 3 1/2 to 6 mph
 3. 6 1/2 to 9 mph
 4. 9 1/2 to 12 mph
- 8-67. When rolling a side slope, you should start the rolling process at what location?
1. At the top of the slope
 2. At the middle of the slope
 3. At the bottom of the slope
 4. At a point 5 feet from either the top or bottom of the slope
- 8-68. What is the optimum temperature range for rolling a hot mix?
1. 100° to 150°
 2. 150° to 185°
 3. 225° to 285°
 4. 300° to 325°
- 8-69. What is the purpose of keeping roller tires and drums moist when rolling a hot mix?
1. To help cool down the hot mix
 2. To keep the hot mix from sticking to the tires and drums
 3. To support the curing of the hot mix
 4. To clean the tires or drums of foreign materials
- 8-70. When water is not enough to keep the hot mix from sticking to roller tires and drums, you should use a detergent designed to breakdown grease or oil.
1. True
 2. False
- 8-71. During hot mix construction, at what stage should longitudinal and edge rolling be performed?
1. After breakdown rolling
 2. Directly behind the paver
 3. After intermediate rolling
 4. Before finish rolling
- 8-72. Breakdown rolling should start at what location on a hot bituminous mat?
1. High side
 2. Center
 3. Low side
 4. Between the low and center
- 8-73. Which of the following factors must be considered when developing a rolling pattern?
1. Location of first pass
 2. Sequence of succeeding passes
 3. Overlapping between passes
 4. All of the above
- B-74. Breakdown rolling with a steel-wheeled roller should be performed with the drive wheel positioned in the direction of travel.
1. True
 2. False
- 8-75. Intermediate rolling should be performed before a hot mix reaches what minimum temperature?
1. 100°
 2. 130°
 3. 165°
 4. 185°